

CLAIMS:

1. A chimeric antibody specific to human CD4 which comprises the variable heavy and light chain sequences of an Old World monkey monoclonal antibody produced against human CD4 and human constant heavy and light domain sequences.
2. The chimeric antibody of claim 1, wherein the human heavy constant domain sequences are selected from gamma 1 isotype, gamma 4 isotype or gamma 4 isotype mutated at position 236 by the substitution of leucine for glutamic acid and/or at position 229 by the substitution of serine for proline.
3. The chimeric antibody of claim 1, wherein said variable heavy and light antigen binding sequences are set forth in Figure 1 and Figure 2.
4. The chimeric antibody of claim 1 which lacks or shows reduced Fc receptor binding activity relative to  $\gamma 1$  chimeric antibodies, complement fixation ability, altered pharmacokinetic profile, and/or *in vivo* T cell depleting activity.
5. The chimeric antibody of claim 1 which alters or regulates CD4 related immune functions including induction of anergy and apoptosis in T cells.
6. An anti-CD4 chimeric antibody which is selected from the group consisting of CE9.1, CE9 $\gamma$ 4, CE9 $\gamma$ 4 $\lambda$ K, CE9 $\gamma$ 4E, and CE9 $\gamma$ 4PE.
7. A recombinant DNA which encodes for a chimeric antibody according to claim 1.
8. A recombinant DNA which encodes for a chimeric antibody according to claim 2.

9. A recombinant DNA which encodes for a chimeric antibody according to claim 3.

10. A recombinant DNA which encodes for a chimeric antibody according to claim 4.

11. A recombinant DNA which encodes and provides for the expression of a chimeric antibody according to claim 6.

10 12. A method for producing a chimeric antibody specific to CD4 comprising expressing the recombinant DNA of claim 7 in a recombinant host cell.

15 13. A method for producing a chimeric antibody specific to CD4 comprising expressing the recombinant DNA of claim 8 in a recombinant host cell.

20 14. A method for producing a chimeric antibody specific to CD4 comprising expressing the recombinant DNA of claim 9 in a recombinant host cell.

15. A method for producing a chimeric antibody specific to CD4 comprising expressing the recombinant DNA of claim 10 in a recombinant host cell.

25 16. A method for producing a chimeric antibody specific to CD4 comprising expressing the recombinant DNA of claim 11 in a recombinant host cell.

30 17. A method for treating or preventing a CD4 related condition comprising administering a therapeutically or prophylactically effective amount of a chimeric antibody according to claim 1.

35 18. A method for treating or preventing a CD4 related condition comprising administering a therapeutically or

prophylactically effective amount of a chimeric antibody according to claim 2.

19. A method for treating or preventing a CD4 related  
5 condition comprising administering a therapeutically or prophylactically effective amount of a chimeric antibody according to claim 3.

20. A method for treating or preventing a CD4 related  
10 condition comprising administering a therapeutically or prophylactically effective amount of a chimeric antibody according to claim 4.

21. A method for treating or preventing a CD4 related  
15 condition comprising administering a therapeutically or prophylactically effective amount of a chimeric antibody according to claim 6.

22. The method of claim 16 wherein said CD4 related  
20 condition is an autoimmune disorder.

23. The method of claim 17 wherein said CD4 related condition is an autoimmune disorder.

24. The method of claim 18 wherein said CD4 related  
25 condition is an autoimmune disorder.

25. The method of claim 19 wherein said CD4 related condition is an autoimmune disorder.

30 26. The method of claim 20 wherein said CD4 related condition is an autoimmune disorder.

27. The method of claim 21 wherein said autoimmune  
35 disorder is rheumatoid arthritis.

28. The method of claim 22 wherein said autoimmune disorder is rheumatoid arthritis.

5 29. The method of claim 23 wherein said autoimmune disorder is rheumatoid arthritis.

30. The method of claim 24 wherein said autoimmune disorder is rheumatoid arthritis.

10 31. The method of claim 25 wherein said autoimmune disorder is rheumatoid arthritis.

15 32. The method of claim 17 wherein said condition is a non-autoimmune disorder selected from the group consisting of leukemia, lymphoma, graft-versus-host disease, asthma, transplant rejection and HIV infection.

20 33. The method of claim 18 wherein said condition is a non-autoimmune disorder selected from the group consisting of leukemia, lymphoma, graft-versus-host disease, asthma, transplant rejection and HIV infection.

25 34. The method of claim 19 wherein said condition is a non-autoimmune disorder selected from the group consisting of leukemia, lymphoma, graft-versus-host disease, asthma, transplant rejection and HIV infection.

30 35. The method of claim 21 wherein said condition is a non-autoimmune disorder selected from the group consisting of leukemia, lymphoma, graft-versus-host disease, asthma, transplant rejection and HIV infection.

36. The method of claim 17 wherein said condition is mediated by or involves CD4+ cells.

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